

SCIENCE!

- The nature of science
- How scientists think
- Goal of science is to understand the natural world.

Scientific Method:

1. Observe → Figure out what you are studying
2. Ask questions and perform background research.

The quality of your answers is dependent on the quality of your questions.

- Credible sources
Most credible are peer-reviewed journals.

3. Form a hypothesis.

Hypothesis → educated guess
based on your research

4. Testing the hypothesis (perform an experiment)

- Within the experiment:

- Independent variable:

This is the one YOU
change. Only want 1!

- Dependent variable:

Result of what has
been changed.

- Constants: Parts of
the experiment that stay
the same

- Control Group:
 - Group that receives no treatment or has anything done to it.
 - Used to establish a baseline of performance.
- Experimental Group:
 - Group that we change the independent variable.
- Do repeated trials.
 - This increases our confidence in the results.
 - Average results to reduce random error.

5. Gather data

- Data is evidence.
- This shows what is really happening versus what you think is happening.
- Data is measured.
- Two types of data:
 1. Quantitative → numbers
NEED UNITS!
 2. Qualitative (categorical)
 - Characteristics of objects
 - described using words

6. Conclusion

Restate your hypothesis,
then state whether data
Supports or rejects your
hypothesis.

7. Sharing

- Communicate with the
scientific community
- Publish the experiment

Science is always tested.